

Dubious Design



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What is called "creationism" is the belief that in six days the Judeo-Christian god created the universe and all the earthly species including humans in finished form much as they exist today. For centuries this view prevailed throughout the western world. Even after evolutionary science had emerged in the latter half of the nineteenth century, the scenario sketched in Genesis remained the only one acceptable for most of Christendom. Not until the early twentieth century did Darwinian science enjoy a fully receptive hearing in the scientific and academic communities of the United States.

But today, rather than riding triumphant, evolutionary science seems to be barely hanging on in the arena of public opinion. A 2007 Gallup poll reported that only 49 percent of the US public accepted evolution and 48 percent did not. Another survey found 42 percent of Americans held strict creationist views. And various school districts throughout the country have experienced furious dust-ups over the teaching of evolution.

Of late there has emerged a more refined offshoot of creationism called intelligent design (ID). It argues that living organisms are so irreducibly complex they could not have evolved haphazardly over the eons from more primitive forms but were precisely created in one fell swoop by a higher intelligence.

In their assault on evolution the creationists and ID protagonists summon an urgent refrain. To quote from a statement by an anti-Darwinian school board in Dover, Pennsylvania: "Darwin's Theory is [just] a theory. . . . The Theory is not a fact. Gaps exist in the Theory for which there is no evidence. . . . Intelligent Design is an explanation of the origin of life that differs from Darwin's view. . . . Students are encouraged to keep an open mind."

Critics of evolution almost have a point. There certainly are "gaps" in an evolutionary theory that is neither fixed nor final. But the same holds true of all scientific theories, be it nutritional science, meteorology, astronomy, biology, geology, or physics. Science frequently produces theories that contain unanswered questions and invite varying interpretations.

Truth be told, there are no fixed and final scientific laws. Many scientists do not even like the term scientific laws, preferring to speak of "scientific theories." For it is in the nature of science--when practiced at its best--to keep everything accessible to further investigation and conceptualization. Seemingly triumphant scientific breakthroughs can open up additional areas of inquiry that lead to still more unanswered questions.

Be this as it may, an established body of science is not something to be dismissed out of hand just because it harbors unanswered questions. That a scientific theory is incomplete does not give us license to ignore all the evidence it has accumulated. The data provided by paleontology, geology, zoology, entomology, molecular biology, and other fields make a strong case for evolution and have yet to be explained away by the intelligent designers.

Scientists have been devising new ways of charting how life develops from simple to more complex forms, which is the essence of evolutionary theory. By reconstructing ancient genetic materials from long-extinct animals, they have been able to show how evolution created a new and more complicated component of molecular structure from existing parts.

By its very nature, life depends on adaptability. This means that change, complexity, and development are inevitable components of the natural world. Not all organisms reproduce with uniform success. Reproductive capacity arises directly from how well creatures (including human ones) are able to compete for resources, both against other species and against other members of the same species---and against problems presented by the natural elements themselves.

Not only competition but a highly evolved cooperation may advantage various species. Given this infinitude of interactive forces, it would seem improbable for evolution not to be happening.

Indeed evolution continues before our very eyes as demonstrated by the recently discovered ways that viruses and other microbes acquire new traits, adapt to new habitats, and move toward becoming new species in a matter of days. New pathogens such as SARS, HIV, and more virulent tuberculosis bacilli continue to evolve. Unfortunately it is their evolutionary capacity that is likely to make these microbes resistant to antibiotic drugs. Evolutionary theory explains their dramatic adaptability; the Bible does not, nor do the intelligent designers.

There is something else to be said about scientific theory. When intelligent designers insist that evolution is a theory and not a fact, they are juxtaposing theory and fact as two mutually exclusive and competitive concepts. This is a view commonly held by laypersons who know nothing about science, who assume that there are "hard facts" on the one hand, and airy theories facilely spun out of one's head on the other.

So we are admonished to stop "theorizing," stop devising abstract speculations that by definition are more fanciful than factual. Sometimes "theory" is even made to stand for something that is presumed by many to be ipso facto false, as in "conspiracy theory."

In both the natural and social sciences, however, theory is something more than mere speculation. Theory is the generalizable distillation of empirical investigation, the payoff that comes from gathering and connecting a heap of pertinent facts. It takes facts to build a scientific theory but it takes a theory to organize and make sense of the facts.

Theories are valued for their explanatory power. A developed and confirmed theory is what science aims for. It is the gold standard of scientific inquiry. The theory of gravity and the theory of relativity are not lacking in facts just because they are theories. To dismiss something as just a theory and not a factual science does not make sense from a scientific point of view. Theory is not all that "soft" and, for that matter, facts are sometimes not all that "hard" or firmly fixed.

Since scientific theories in all fields contain some unanswered questions, why is evolution singled out by the intelligent designers as the one gap-ridden speculative theory? The answer is glaringly evident: evolution is in direct collision with Genesis. If evolution is true, then the Bible's description of how God fashioned the world in six days and created humans in their present form seems much the fairy tale. And if Genesis is a fairy tale, then of what validity is the remainder of the divinely dictated tome that serves as the unerring fundament of Judaic-Christian belief?

The response offered by the scientific defenders of evolution is predictable and somewhat incomplete: "We have no way of testing and demonstrating the truth or falsity of non-natural spirit forces that are presumed to be acting in nature." It would be nice if someday someone would add, "and neither do the intelligent designers." That is the real problem. Of course, scientists cannot move outside their fundamental paradigm and demonstrate divine causation, but neither can the designing creationists.

This is a crucial point because the burden of proof for intelligent design is on the designers. Where is their field work, their laboratory experiments, their observational reports and accumulated evidence measuring the effects of ID vectors on various natural forces and entities, all the things we would expect from a scientific inquiry interested in "hard facts"?

This is the problem with teaching ID: what would you actually teach? How could you judge the reliability of what you teach? How do we determine what is or isn't evidentiary if one can postulate a priori an unseen supreme designer lurking behind everything? In the two decades since ID has emerged, it has generated no important experiments or insights into biology, and looks less and less like a science and increasingly like a theological polemic.

Advocates of ID seem untroubled by their own scientific illiteracy. One of them asserts that there is no evidence of a protracted evolution because "all the vertebrate groups, from fish to mammals appear [in the fossil record] at one time." Not true, George Monbiot responds; the first fish fossils and the first mammal fossils are separated from each other by some 300 million years.

ID proponents make much of the human eye. Given the intricacy and delicate precision that enables it to perform its marvelous function, and "the purposeful arrangement of parts," the eye could never have developed from hit-and-miss mutation and natural selection, the argument goes. If evolution were true, there would be fossils of particular animals without vision and others with varying degrees of eye development strung out across the ages, but "such fossils do not exist," the intelligent designers maintain. But such fossils do exist, Monbiot reminds us; the fossil record does indeed stretch across the ages with countless eyes "in all stages of development."

As for the creationists, it is not that they have questions about particular aspects of evolution, as might we all. Rather they deny that it ever happened. They believe the book of Genesis is literally true. Possessed of the absolute truth as they see it, they are not prone to tolerate alternative perspectives. They are not interested in a pluralism of views. They do not want to supplement evolutionary theory but to replace it. , even as they call for more tolerance in secular schools and increasingly greater exposure for their own "explanation."

Its proponents insist that ID is not religiously anchored; it requires neither miracles nor a creator. They avoid mention of the six-day jiffy creation and other biblical narratives. But if ID is not supernatural, then how does it act as a first and perfect universalistic template for all this imperfect unfinished world? How can it create the natural world in all its wondrous and presumably irreducible complexity if it is itself merely a component of that complexity? Here is a designer that is the source of all creation's form and content but which itself cannot be subjected to any kind of scientific study, a designer that supposedly is fixed in nature yet transcends ordinary materiality.

The designers centered at the Discovery Institute, a conservative think tank in Seattle, revealed their religiously motivated hand in their now infamous and strikingly candid, in-house document, "The Wedge Strategy," written in 1999 and leaked to the public some time later. According to "The Wedge Strategy," the ultimate goal of intelligent design is "nothing less than the overthrow of materialism and its cultural legacies" replacing scientific materialism "with the theistic understanding that nature and human beings are created by God."

The authors of this document blame evolutionary theory and materialistic science for most of the world's evils. They write, "Thinking they could engineer the perfect society through the application of scientific knowledge, materialist reformers advocated coercive

government programs that falsely promised to create heaven on earth." In sum, ID is not a field of study; it is a refined fundamentalist preachment in service to a reactionary political agenda.

The creationists and ID designers appear to be championing free speech and diversity of ideas when they urge that students be taught more than just Darwinism. In fact they themselves are not interested in a pluralism of views. They do not favor the teaching of every theory of creation.

There are as many stories of how the world began and how it is held together as there are tribal mythologies and tales. The fundamentalist Jesus worshippers are concerned only about the Genesis narrative, the one they want accorded exclusive standing in the schools.

Thus in 1999, creationists on the Kansas state board of education removed nearly all references to evolution from the curriculum. Such references were restored only after Kansas voters ousted the creationist bloc in 2001. In short, the creationists do not want to supplement evolutionary theory but to replace it, which---as demonstrated in Kansas---is exactly what they do when afforded the opportunity.

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